

TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MERB0001N1Z
Revision no.:
0

This Certificate is issued by DNV UK Limited based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016 as amended.

This is to certify:

that the **Sewage systems (for use by ships, other than passenger ships, in all areas and by passenger ships outside MARPOL Annex IV special areas)**

with type designation(s)

HL-CONT Plus 0125, HL-CONT Plus 025, HL-CONT Plus 05, HL-CONT Plus 10, HL-CONT Plus 20, HL-CONT Plus 40, HL-CONT Plus 80

issued to

Hamann AG
Hollenstedt, Germany

is found to comply with the Regulation (UK) **MSN 1874 Amendment 10** for

Item no. **UK/2.6b (Row 1 of 1)**

according to the following requirements:

MARPOL 73/78 Annex IV, Reg. 9.

Further details of the equipment and conditions for certification are given overleaf.

Date of issue: **2025-04-01**

Expiry date: **2030-03-31**

DNV local unit:
Hamburg – CMC
North/East



for **DNV UK Ltd.**

Approval Engineer:
Hagen Markus

Approved Body No.: **0097**

Christine Mydlak-Röder
MER Service Responsible



**Maritime &
Coastguard
Agency**

UK Approved Body Authorised
by the MCA

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.

During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.

"The Mark of Conformity" may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body. In case limitations of use apply, these should be indicated in the Annex.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

HAMANN HL-CONT Plus sewage treatment plant series is designed to process both black-water and grey-water as a sewage mixture.

The treatment plant consist of the following treatment stages:

Preparation - Sewage mixing tank

Depending on the tank configuration on board, grey-water and/or black-water are transferred into the sewage mixing tank to create the sewage mixture.

Maceration

The sewage mixture from the sewage mixing tank is first run through a maceration to chop up solid and fibrous components.

TSS/COD/BOD Reduction

By means of our Dissolved Air Flotation (DAF) technology, HAMANN HL-CONT Plus sewage treatment plants separate the suspended solids (TSS) and reduce the chemical (COD) and biological (BOD) oxygen demand. The sewage is enriched with air under a pressure in the saturation. After being discharged into the flotation tank through the pressure release valve, the excess air forms micro bubbles. A flocculant is added in order to let air bubbles and suspended particles form larger flakes. These flakes float upwards, creating a sludge foam on the surface and leaving the clear phase in the lower part of the flotation tank. The sludge foam spills into the sludge compartment and is subsequently fed into the ship's sludge tank.

Disinfection

The treated sewage is finally exposed to UV radiation to degrade the DNA of bacteria and microorganisms, rendering them incapable of reproducing and infecting.

After disinfection the treated sewage may be discharged overboard, if allowed.

Application/Limitation

The HL-CONT Plus sewage system series is approved for the capacities as listed in Appendix "Application and Limitation".

Please see Appendix: Application/Limitation

Type Examination documentation

Tests carried out

Test results and details of tests conducted on samples from the sewage treatment plant in accordance with resolution MEPC.227 (64), as amended, (exception for section 4.2).

See Appendix "Tests carried out".

Please see Appendix: Tests carried out

Marking of product

See Appendix "Marking".

Please see Appendix: Marking of product

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Application/Limitation

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IMO Resolution MEPC.227(64)(b)	Hydraulic loading m ³ /day	Organic loading kg / day biochemical oxygen demand without nitrification (BODs without nitrification)	Assembly drawings date	Date
HL-CONT Plus 0125	3.00	2.41	01-012-00004-0-01000-B 01-025-00023-0-01000-B	2014-07-10 2023-10-10
HL-CONT Plus 025	6.00	4.82	01-025-00001-0-01000-B 01-025-00036-0-01000-B	2014-07-10 2023-09-18
HL-CONT Plus 05	12.0	5.81	01-005-00010-0-01000-B 01-005-00042-0-01000-B	2009-09-18 2023-09-19
HL-CONT Plus 10	24.0	11.62	01-010-00002-0-01000-B 01-010-00094-0-01000-B	2009-05-24 2021-08-19
HL-CONT Plus 20	48.0	23.24	01-020-00009-0-01000-B 01-020-00033-0-01000-B	2011-04-04 2024-01-25
HL-CONT Plus 40	96.0	46.5	01-040-00004-0-01000-B 01-040-00035-0-01000-B	2011-04-04 2024-01-24
HL-CONT Plus 80	192.0	93.0	01-080-00009-0-01000-B 01-080-00023-0-01000-B	2011-03-15 2023-01-06

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Marking of product

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For traceability to this Type Examination Certificate, each unit to be marked with a name plate containing at least the following data:

Scope	Example
Manufacturer name	HAMANN AG
Model	HL_CONT Plus 10
Serial number	xxxxxxxxxxxxxxxxxxxx
MER Module B	MER0001N1Z
MER Module D	MER0001N13
MER Mark of conformity ¹ Mark / Approved body / Year built	 0097 /2025

Notes

¹ may only be affixed to the type approved equipment, if the associated production-surveillance module (D, E or F) is valid.

APPENDIX

Tests carried out

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Test results and details of tests conducted on samples from the sewage treatment plant in accordance with resolution MEPC.227(64) exception for 4.2 for Passenger Ships in Special Areas:

Sewage treatment plant type:	HL-CONT Plus 025
Manufactured by:	HAMANN .AG, Beider.Lehmkuhle.4, 21279 Hollenstedt,. Germany
Organization conducting the test:	SIBT Stade under supervision of BG Verkehr, Ship Safety Division
Organization handling the samples:	LADR GmbH, 21502 Geesthacht Lauenburger Str. 65-67
Test Location:	Municipal sewage treatment plant Glüsing
Designed hydraulic loading:	6.0 m ³ /day
Designed organic loading:	4.82 Kg/day BOD ₅
No. of effluent samples tested:	40
No. of influent samples tested:	40

Influent quality²

Raw sewage quality (geometrical mean calculated from 40 samples)

Total suspended solids, TSS:	2901.0 mg/l
BOD ₅ without nitrification:	748.0 mg/l ¹
Maximum hydraulic loading (Qi):	6.00 m ³ /day
Minimum hydraulic loading:	Not applicable
Average hydraulic loading	Not applicable
Effluent flow (Qe)	6.0 m ³ /day
Dilution compensator factor (Qi/Qe)	1

Effluent quality

Effluent quality (geometrical mean calculated from 40 samples)

Total suspended solids, TSS	35.0 mg/l ¹
Thermotolerant coliforms:	70 cfu/100ml
BOD ₅ :	25.0 mg/l ¹
COD:	56.0 mg/l
Maximum pH:	6.75
Minimum pH:	6.1
Type of disinfectant used:	UV
Visible floating solids	none
Discoloration expected:	no

Notes

¹ Difference to test report SIBT 2014071401 (2014) see approved excel spread sheet "Zert Werte HLCP_025, 19.07.2022"

² No dilution water was introduced to the sewage treatment plant after the influent sample point.

Was the sewage treatment plant tested with:

Fresh water flushing?

☒ Yes ☐ No

Saltwater flushing?

☐ Yes ☒ No

Fresh and saltwater flushing?

☐ Yes ☒ No

Grey water added?

☒ Yes ☐ No

Was the sewage treatment plant tested against the environmental conditions specified in section 5.9 of resolution MEPC.227(64):

Temperature:

☒ Yes ☐ No

Humidity:

☒ Yes ☐ No

Inclination:

☒ Yes ☐ No

Vibration:

☒ Yes ☐ No

Reliability of Electrical and Electronic Equipment:

☒ Yes ☐ No

Limitations and the conditions of operation are imposed:

Salinity:

None

Temperature:

+5°C up to + 50 °C

Humidity:

≤ 95 %

Inclination:

Up to 22,5°

Vibration:

None

References

Performance test acc. to MEPC 227(64) - HL-CONT Plus 025, Report: 2014071401 issued by SIBT Stade.

Environmental tests on control unit acc. to MEPC 159(55), Testing criteria Part 3 of the appendix MEPC.107(49).
Test report: 6830/09, 2009-08-10 – HL Cont Plus 10.

Reference: BG-Verkehr letter "transcription of certificates for sewage treatment plants HL-Cont Plus from MEPC.159(55) to MEPC.227(64) dated 07.01.2013.

Test results and details of tests conducted on samples from the sewage treatment plant in accordance with resolution MEPC.227(64) exception for 4.2:

Sewage treatment plant type:	HL-Cont Plus 10
Manufactured by:	HAMANN .AG, Bei der.Lehmkuhle.4, 21279 Hollenstedt,. Germany
Organization conducting the test:	BFBSV Hamburg under supervision of BG Verkehr, Ship Safety Division
Organization handling the samples:	BFSV Institute an der HAW Hamburg, Lohbrügger Kirchstrasse 65, D-21033
Test Location:	Municipal sewage treatment plant Glüsing
Designed hydraulic loading:	24.0 m ³ /day
Designed organic loading:	11.62 Kg/day BOD ₅
No. of effluent samples tested:	40
No. of influent samples tested:	40

Influent quality¹

Raw sewage quality (geometrical mean calculated from 40 samples)

Total suspended solids, TSS:	679.0 mg/l
BOD ₅ without nitrification :	484.0 mg/l
Maximum hydraulic loading(Q _i):	24.0 m ³ /day
Minimum hydraulic loading:	Not applicable
Average hydraulic loading:	Not applicable
Effluent flow (Q _e)	24.0 m ³ /day
Dilution compensator factor (Q _i /Q _e)	1

Effluent quality

Effluent quality (geometrical mean calculated from 40 samples)

Total suspended solids, TSS:	16.0 mg/l
Thermotolerant coliform count:	29 cfu/100 ml
BOD ₅ without nitrification:	20.0 mg/l
COD (Chemical oxygen demand):	48.0 mg/l
Minimum pH:	5.9
Maximum pH:	6.7
Type of disinfectant used:	UV
Visible floating solids	none
Discoloration expected:	no

Notes

¹ No dilution water was introduced to the sewage treatment plant after the influent sample point.

Was the sewage treatment plant tested with:

Fresh water flushing?

☒ Yes ☐ No

Saltwater flushing?

☐ Yes ☒ No

Fresh and saltwater flushing?

☐ Yes ☒ No

Grey water added?

☒ Yes ☐ No

Was the sewage treatment plant tested against the environmental conditions specified in section 5.9 of resolution MEPC.227(64):

Temperature:

☒ Yes ☐ No

Humidity:

☒ Yes ☐ No

Inclination:

☒ Yes ☐ No

Vibration:

☒ Yes ☐ No

Reliability of Electrical and Electronic Equipment:

☒ Yes ☐ No

Limitations and the conditions of operation are imposed:

Salinity:

None

Temperature:

+ 5°C up to 50°C.

Humidity:

None

Inclination:

22.5°

Vibration:

None

References

Performance test report acc. to MEPC 159(55), Report 6800a/09 issued by BFBSV, 10.07.2009 – HL Cont Plus 10.

Environmental tests on control unit acc. to MEPC 159(55), Testing criteria Part 3 of the appendix MEPC.107(49).

Test report: 6830/09, 2009-08-10 – HL Cont Plus 10.

Reference: BG-Verkehr letter "transcription of certificates for sewage treatment plants HL-Cont Plus from MEPC.159(55) to MEPC.227(64) dated 07.01.2013.

End of Appendix